

10/529381

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SEQUENCE LISTING

<110> ONCOTHERAPY SCIENCE, INC.

JAPAN AS REPRESENTED BY THE PRESIDENT OF THE UNIVERSITY OF TOKYO

<120> GENES AND POLYPEPTIDES RELATING TO PROSTATE CANCERS

<130> ONC-A0216P2

<150> US 60/414,873

<151> 2002-09-30

<160> 28

<170> PatentIn version 3.1

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260

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22 / 59

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275

280

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Ile Val Tyr Tyr Lys Asp Cys Thr His Tyr Phe Val Met Thr Ala Lys

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Lys Gln Ser Leu Leu Asp Lys Gly Val Ile Ile Asn Asp Tyr Ile Asp

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Thr Glu Met Leu Leu Cys Ala Glu Asn Val Asn Gln Asp Asn Leu Leu

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Ser Tyr Ala Arg Glu Ala Ala Asp Phe Ala Thr Asn Tyr Gln Leu Pro

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Ser Leu Asp Phe Ala Met Asn His Tyr Gly Gln Pro Asp Val Ala Met

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Phe Asp Phe Thr Cys Met Tyr Ala Ser Glu Asn Ala Ala Leu Val Arg

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Glu Arg Gln Ala His Gln Leu Leu Val Ala Leu Val Gly Asp Ser Leu

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395

400

Leu Glu Pro Phe Trp Pro Met Gly Thr Gly Cys Ala Arg Gly Phe Leu

23 / 59

405

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Ala Ala Phe Asp Thr Ala Trp Met Val Lys Ser Trp Asn Gln Gly Thr

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Pro Pro Leu Glu Leu Leu Ala Glu Arg Glu Ser Leu Tyr Arg Leu Leu

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Pro Gln Thr Thr Pro Glu Asn Ile Asn Lys Asn Phe Glu Gln Tyr Thr

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Leu Asp Pro Gly Thr Arg Tyr Pro Asn Leu Asn Ser His Cys Val Arg

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Pro His Gln Val Lys His Leu Tyr Ile Thr Lys Glu Leu Glu His Tyr

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Pro Leu Glu Arg Leu Gly Ser Val Arg Arg Ser Val Asn Leu Ser Arg

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Lys Glu Ser Asp Ile Arg Pro Ser Lys Leu Leu Thr Trp Cys Gln Gln

515

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Gln Thr Glu Gly Tyr Gln His Val Asn Val Thr Asp Leu Thr Thr Ser

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24 / 59

Trp Arg Ser Gly Leu Ala Leu Cys Ala Ile Ile His Arg Phe Arg Pro

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Glu Leu Ile Asn Phe Asp Ser Leu Asn Glu Asp Asp Ala Val Glu Asn

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Asn Gln Leu Ala Phe Asp Val Ala Glu Arg Glu Phe Gly Ile Pro Pro

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Val Thr Thr Gly Lys Glu Met Ala Ser Ala Gln Glu Pro Asp Lys Leu

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Ser Met Val Met Tyr Leu Ser Lys Phe Tyr Glu Leu Phe Arg Gly Thr

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Pro Leu Arg Pro Val Asp Ser Trp Arg Lys Asn Tyr Gly Glu Asn Ala

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Asp Leu Ser Leu Ala Lys Ser Ser Ile Ser Asn Asn Tyr Leu Asn Leu

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Thr Phe Pro Arg Lys Arg Thr Pro Arg Val Asp Gly Gln Thr Gly Glu

660

665

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Asn Asp Met Asn Lys Arg Arg Arg Lys Gly Phe Thr Asn Leu Asp Glu

675

680

685

25 / 59

Pro Ser Asn Phe Ser Ser Arg Ser Leu Gly Ser Asn Gln Glu Cys Gly

690

695

700

Ser Ser Lys Glu Gly Gly Asn Gln Asn Lys Val Lys Ser Met Ala Asn

705

710

715

720

Gln Leu Leu Ala Lys Phe Glu Glu Ser Thr Arg Asn Pro Ser Leu Met

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Lys Gln Glu Lys Lys Ser Pro Ser Gly Phe His Phe His Pro Ser His

740

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750

Leu Arg Thr Val His Pro Gln Glu Ser Met Arg Lys Ser Phe Pro Leu

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Asn Leu Gly Gly Ser Asp Thr Cys Tyr Phe Cys Lys Lys Arg Val Tyr

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Val Met Glu Arg Leu Ser Ala Glu Gly His Phe Phe His Arg Glu Cys

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795

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Phe Arg Cys Ser Ile Cys Ala Thr Thr Leu Arg Leu Ala Ala Tyr Thr

805

810

815

Phe Asp Cys Asp Glu Gly Lys Phe Tyr Cys Lys Pro His Phe Ile His

26 / 59

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Cys Lys Thr Asn Ser Lys Gln Arg Lys Arg Arg Ala Glu Leu Lys Gln

835

840

845

Gln Arg Glu Glu Glu Ala Thr Trp Gln Glu Gln Glu Ala Pro Arg Arg

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Asp Thr Pro Thr Glu Ser Ser Cys Ala Val Ala Ala Ile Gly Thr Leu

865

870

875

880

Glu Gly Ser Pro Pro Gly Ile Ser Thr Ser Phe Phe Arg Lys Val Leu

885

890

895

Gly Trp Pro Leu Arg Leu Pro Arg Asp Leu Cys Asn Trp Met Gln Gly

900

905

910

Leu Leu Gln Ala Ala Gly Leu His Ile Arg Asp Asn Ala Tyr Asn Tyr

915

920

925

Cys Tyr Met Tyr Glu Leu Leu Ser Leu Gly Leu Pro Leu Leu Trp Ala

930

935

940

Phe Ser Glu Val Leu Ala Ala Met Tyr Arg Glu Ser Glu Gly Ser Leu

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27 / 59

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Met Gly Glu Asn Glu Asp Glu Lys Gln

28 / 59

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Lys Gly Thr Leu Gln Ala Phe Asn Ile Leu Thr Arg His Leu Asp Leu

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Asp Pro Leu Asp His Arg Asn Phe Tyr Ser Lys Leu Lys Ser Lys Val

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Thr Thr Trp Lys Ala Lys Ala Leu Trp Tyr Lys Leu Asp Lys Arg Gly

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Ser His Lys Glu Tyr Lys Arg Gly Lys Ser Cys Thr Asn Thr Lys Cys

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Leu Ile Val Gly Gly Gly Pro Cys Gly Leu Arg Thr Ala Ile Glu Leu

90 95 100 105

gcc tac ctg gga gcc aaa gtg gtc gtg gtg gag aag agg gac tcc ttc 627

29 / 59

Ala Tyr Leu Gly Ala Lys Val Val Val Val Glu Lys Arg Asp Ser Phe

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120

tcc cgg aac aac gtg cta cac ctc tgg cct ttc acc atc cat gac ctt 675

Ser Arg Asn Asn Val Leu His Leu Trp Pro Phe Thr Ile His Asp Leu

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Ala Leu Met Leu Gly Val Glu Ile His Val Asn Val Glu Phe Val Lys

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gtt cta gag cct cct gaa gat caa gaa aat caa aaa att ggc tgg cgg 867

Val Leu Glu Pro Pro Glu Asp Gln Glu Asn Gln Lys Ile Gly Trp Arg

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gca gaa ttt ctc cct aca gac cat tct ctg tcg gag ttt gag ttt gac 915

Ala Glu Phe Leu Pro Thr Asp His Ser Leu Ser Glu Phe Glu Phe Asp

205

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215

30 / 59

gtc atc att ggt gcc gat ggc cgc agg aac acc ctg gaa ggg ttc aga 963

Val Ile Ile Gly Ala Asp Gly Arg Arg Asn Thr Leu Glu Gly Phe Arg

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aga aaa gaa ttc cgt ggg aag ctg gcg att gcc atc acc gcc aac ttc 1011

Arg Lys Glu Phe Arg Gly Lys Leu Ala Ile Ala Ile Thr Ala Asn Phe

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Val Ala Phe Ile Phe Asn Gln Lys Phe Phe Gln Asp Leu Lys Glu Glu

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Thr Gly Ile Asp Leu Glu Asn Ile Val Tyr Tyr Lys Asp Cys Thr His

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tat ttt gta atg aca gcc aag aag cag agc ctg ctc gac aaa ggt gtc 1203

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310

atc att aac gac tac atc gac aca gag atg ctg ctg tgt gcg gag aac 1251

31 / 59

Ile Ile Asn Asp Tyr Ile Asp Thr Glu Met Leu Leu Cys Ala Glu Asn

315

320

325

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Val Asn Gln Asp Asn Leu Leu Ser Tyr Ala Arg Glu Ala Ala Asp Phe

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Ala Thr Asn Tyr Gln Leu Pro Ser Leu Asp Phe Ala Met Asn His Tyr

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Glu Asn Ala Ala Leu Val Arg Glu Arg Gln Ala His Gln Leu Leu Val

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gaa agt ctc tac cgg ctg tta cct cag aca acc ccg gag aac atc aac 1635

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Leu Asn Ser His Cys Val Arg Pro His Gln Val Lys His Leu Tyr Ile

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Thr Lys Glu Leu Glu His Tyr Pro Leu Glu Arg Leu Gly Ser Val Arg

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Arg Ser Val Asn Leu Ser Arg Lys Glu Ser Asp Ile Arg Pro Ser Lys

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33 / 59

Leu Leu Thr Trp Cys Gln Gln Gln Thr Glu Gly Tyr Gln His Val Asn

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Ile Ile His Arg Phe Arg Pro Glu Leu Ile Asn Phe Asp Ser Leu Asn

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Glu Asp Asp Ala Val Glu Asn Asn Gln Leu Ala Phe Asp Val Ala Glu

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Tyr Glu Leu Phe Arg Gly Thr Pro Leu Arg Pro Val Asp Ser Trp Arg

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3 5 / 5 9

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Glu Cys Phe Arg Cys Ser Ile Cys Ala Thr Thr Leu Arg Leu Ala Ala

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830

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36 / 59

cgg aga gac act ccc acc gaa agt tct tgc gca gtg gcc gcc att ggc 2835

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37 / 59

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Leu Arg

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39 / 59

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Phe Tyr Ser Lys Leu Lys Ser Lys Val Thr Thr Trp Lys Ala Lys Ala

50 55 60

Leu Trp Tyr Lys Leu Asp Lys Arg Gly Ser His Lys Glu Tyr Lys Arg

65 70 75 80

Gly Lys Ser Cys Thr Asn Thr Lys Cys Leu Ile Val Gly Gly Gly Pro

85 90 95

Cys Gly Leu Arg Thr Ala Ile Glu Leu Ala Tyr Leu Gly Ala Lys Val

100 105 110

Val Val Val Glu Lys Arg Asp Ser Phe Ser Arg Asn Asn Val Leu His

43 / 59

115

120

125

Leu Trp Pro Phe Thr Ile His Asp Leu Arg Gly Leu Gly Ala Lys Lys

130

135

140

Phe Tyr Gly Lys Phe Cys Ala Gly Ser Ile Asp His Ile Ser Ile Arg

145

150

155

160

Gln Leu Gln Leu Ile Leu Phe Lys Val Ala Leu Met Leu Gly Val Glu

165

170

175

Ile His Val Asn Val Glu Phe Val Lys Val Leu Glu Pro Pro Glu Asp

180

185

190

Gln Glu Asn Gln Lys Ile Gly Trp Arg Ala Glu Phe Leu Pro Thr Asp

195

200

205

His Ser Leu Ser Glu Phe Glu Phe Asp Val Ile Ile Gly Ala Asp Gly

210

215

220

Arg Arg Asn Thr Leu Glu Gly Phe Arg Arg Lys Glu Phe Arg Gly Lys

225

230

235

240

Leu Ala Ile Ala Ile Thr Ala Asn Phe Ile Asn Arg Asn Ser Thr Ala

245

250

255

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Glu Ala Lys Val Glu Glu Ile Ser Gly Val Ala Phe Ile Phe Asn Gln

260

265

270

Lys Phe Phe Gln Asp Leu Lys Glu Glu Thr Gly Ile Asp Leu Glu Asn

275

280

285

Ile Val Tyr Tyr Lys Asp Cys Thr His Tyr Phe Val Met Thr Ala Lys

290

295

300

Lys Gln Ser Leu Leu Asp Lys Gly Val Ile Ile Asn Asp Tyr Ile Asp

305

310

315

320

Thr Glu Met Leu Leu Cys Ala Glu Asn Val Asn Gln Asp Asn Leu Leu

325

330

335

Ser Tyr Ala Arg Glu Ala Ala Asp Phe Ala Thr Asn Tyr Gln Leu Pro

340

345

350

Ser Leu Asp Phe Ala Met Asn His Tyr Gly Gln Pro Asp Val Ala Met

355

360

365

Phe Asp Phe Thr Cys Met Tyr Ala Ser Glu Asn Ala Ala Leu Val Arg

370

375

380

Glu Arg Gln Ala His Gln Leu Leu Val Ala Leu Val Gly Asp Ser Leu

385

390

395

400

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Leu Glu Pro Phe Trp Pro Met Gly Thr Gly Cys Ala Arg Gly Phe Leu

405

410

415

Ala Ala Phe Asp Thr Ala Trp Met Val Lys Ser Trp Asn Gln Gly Thr

420

425

430

Pro Pro Leu Glu Leu Leu Ala Glu Arg Glu Ser Leu Tyr Arg Leu Leu

435

440

445

Pro Gln Thr Thr Pro Glu Asn Ile Asn Lys Asn Phe Glu Gln Tyr Thr

450

455

460

Leu Asp Pro Gly Thr Arg Tyr Pro Asn Leu Asn Ser His Cys Val Arg

465

470

475

480

Pro His Gln Val Lys His Leu Tyr Ile Thr Lys Glu Leu Glu His Tyr

485

490

495

Pro Leu Glu Arg Leu Gly Ser Val Arg Arg Ser Val Asn Leu Ser Arg

500

505

510

Lys Glu Ser Asp Ile Arg Pro Ser Lys Leu Leu Thr Trp Cys Gln Gln

515

520

525

Gln Thr Glu Gly Tyr Gln His Val Asn Val Thr Asp Leu Thr Thr Ser

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| | | | |
|---|-----|-----|-----|
| 530 | 535 | 540 | |
| Trp Arg Ser Gly Leu Ala Leu Cys Ala Ile Ile His Arg Phe Arg Pro | | | |
| 545 | 550 | 555 | 560 |
| Glu Leu Ile Asn Phe Asp Ser Leu Asn Glu Asp Asp Ala Val Glu Asn | | | |
| 565 | 570 | 575 | |
| Asn Gln Leu Ala Phe Asp Val Ala Glu Arg Glu Phe Gly Ile Pro Pro | | | |
| 580 | 585 | 590 | |
| Val Thr Thr Gly Lys Glu Met Ala Ser Ala Gln Glu Pro Asp Lys Leu | | | |
| 595 | 600 | 605 | |
| Ser Met Val Met Tyr Leu Ser Lys Phe Tyr Glu Leu Phe Arg Gly Thr | | | |
| 610 | 615 | 620 | |
| Pro Leu Arg Pro Val Asp Ser Trp Arg Lys Asn Tyr Gly Glu Asn Ala | | | |
| 625 | 630 | 635 | 640 |
| Asp Leu Ser Leu Ala Lys Ser Ser Ile Ser Asn Asn Tyr Leu Asn Leu | | | |
| 645 | 650 | 655 | |
| Thr Phe Pro Arg Lys Arg Thr Pro Arg Val Asp Gly Gln Thr Gly Glu | | | |
| 660 | 665 | 670 | |

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Asn Asp Met Asn Lys Arg Arg Arg Lys Gly Phe Thr Asn Leu Asp Glu

675

680

685

Pro Ser Asn Phe Ser Ser Arg Ser Leu Gly Ser Asn Gln Glu Cys Gly

690

695

700

Ser Ser Lys Glu Gly Gly Asn Gln Asn Lys Val Lys Ser Met Ala Asn

705

710

715

720

Gln Leu Leu Ala Lys Phe Glu Glu Ser Thr Arg Asn Pro Ser Leu Met

725

730

735

Lys Gln Glu Ser Met Arg Lys Ser Phe Pro Leu Asn Leu Gly Gly Ser

740

745

750

Asp Thr Cys Tyr Phe Cys Lys Lys Arg Val Tyr Val Met Glu Arg Leu

755

760

765

Ser Ala Glu Gly His Phe Phe His Arg Glu Cys Phe Arg Cys Ser Ile

770

775

780

Cys Ala Thr Thr Leu Arg Leu Ala Ala Tyr Thr Phe Asp Cys Asp Glu

785

790

795

800

Gly Lys Phe Tyr Cys Lys Pro His Phe Ile His Cys Lys Thr Asn Ser

805

810

815

48 / 59

Lys Gln Arg Lys Arg Arg Ala Glu Leu Lys Gln Gln Arg Glu Glu Glu

820

825

830

Ala Thr Trp Gln Glu Gln Glu Ala Pro Arg Arg Asp Thr Pro Thr Glu

835

840

845

Ser Ser Cys Ala Val Ala Ala Ile Gly Thr Leu Glu Gly Ser Pro Pro

850

855

860

Gly Ile Ser Thr Ser Phe Phe Arg Lys Val Leu Gly Trp Pro Leu Arg

865

870

875

880

Leu Pro Arg Asp Leu Cys Asn Trp Met Gln Gly Leu Leu Gln Ala Ala

885

890

895

Gly Leu His Ile Arg Asp Asn Ala Tyr Asn Tyr Cys Tyr Met Tyr Glu

900

905

910

Leu Leu Ser Leu Gly Leu Pro Leu Leu Trp Ala Phe Ser Glu Val Leu

915

920

925

Ala Ala Met Tyr Arg Glu Ser Glu Gly Ser Leu Glu Ser Ile Cys Asn

930

935

940

Trp Val Leu Arg Cys Phe Pro Val Lys Leu Arg

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945

950

955

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<213> Artificial

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20

<210> 8

<211> 20

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20

50 / 59

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23

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<400> 10

ccgtgtggca ctgtaaatga tta

23

<210> 11

51 / 59

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<400> 11

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23

<210> 12

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<212> DNA

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tctccttaga gagaagtggg gtg

23

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<211> 20

<212> DNA

5 2 / 5 9

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tacgtgagct ctgaggacca

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<210> 15

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<212> DNA

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53 / 59

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ccaggatctg cacaaataca

20

<210> 17

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5 4 / 5 9

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50

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32

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<211> 29

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5 5 / 5 9

cccaagctta tgggggaaaa cgaggatga

29

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38

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<212> DNA

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tagggcccat ggggcccgg

19

56 / 59

<210> 22

<211> 19

<212> DNA

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accagttggg cccaaaggc

19

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19

<210> 24

57/59

<211> 19

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<213> Artificial

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19

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<211> 19

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<213> Artificial

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gaagcagcac gacttcttc

19

<210> 26

<211> 19

<212> DNA

58 / 59

<213> Artificial

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<223> Artificially synthesized target sequence for SiRNA

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19

<210> 27

<211> 19

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59/59

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ctactgctac atgtacgag

19